



GOLF CLUB HEAD CONSTRUCTION OF THE WOOD VARIETY

BACKGROUND



1. Field of the Invention

The present invention relates generally to a golf club, and, more particularly to the construction of the head of a golf club of the so-called wood variety as opposed to a club of the iron variety.

2. Description of Related Art

A full set of golf clubs typically includes three general categories or varieties of clubs commonly referred to as “woods”, “irons” and a “putter”. Much earlier this terminology was adopted because the striking head of the longer clubs was made of wood whereas the striking head of the shorter clubs was made of iron, and a putter was a special form of an iron club. More recently, although the terminology of a “wood” is still used for the longer club category, the head of the club may be found to be made of metal alone or in combination with a non-wood material (e.g., various plastics).

Moreover, wood clubs come in different lengths and striking face slopes varying from the least sloping face and longest club (a “driver”) which is typically used to strike a ball positioned on the top of a tee stuck into the ground, to shorter and greater sloping striking faces considered for striking a ball located on a ground surface. The present invention will be described primarily in connection

with a driver head construction for ease of presentation, although the head construction may be advantageously applied to other wood clubs of the shorter length and greater sloped striking faces.

SUMMARY OF THE INVENTION

5 In the practice of the present invention there is provided a golf club head of the wood category constructed of multiple parts assembled to form a unitary club head including a high-density metal ball striking plate and the remainder of relatively low-density nonmetal parts with an overall head center of gravity located lower and more forwardly than would be achieved by a single material
10 head of either solid or hollow construction.

BRIEF DESCRIPTION OF THE DRAWING

These and other objects of the present invention will become more readily apparent upon reading the following detailed description and upon reference to the attached drawings in which:

15 FIG. 1 is a perspective view of the golf club head of this invention;

FIGS. 2A, 2B and 2C are front, rear and edge views, respectively, of the club head striking plate;

FIG. 3 is an elevational view of a central housing part of the club head looking into the side that accommodates a striking plate;

20 FIG. 4 is an elevational view of a central housing part from the side opposite that of FIG. 3; and

FIG. 5 is a sectional elevational view taken along the line 5-5 of FIG. 1.

DESCRIPTION OF A PREFERRED EMBODIMENT

Turning now to FIG. 1 the drawing, there is shown in perspective a golf club head 10 of the present invention secured to the end of a conventional shaft 12 and handgrip means 14 forming golf club of the "wood" category. As will be more particularly described, the club head 10 includes three parts which are assembled to form a unitary construction, the head parts comprising a metal ball striking plate 16, a central housing part 18 to which a bushing 20 and shaft 12 are secured, and a back housing part 22.

As can be seen best in FIGS. 2A, B and C, the ball striking plate 16 includes a forwardly facing wall 24 and an outer edge flange 26 extending continuously about the wall 24 except for the interruption of a single opening 28 therein. As will be described in more detail later herein, the flange 26 is fittingly secured to the central housing part 18 on full assembly of the club head. The wall that impacts the ball during play preferably has a uniform thickness of approximately 0.125 of an inch and is constructed of a dense tough metal such as titanium, for example.

The central housing part 18 depicted in FIGS. 3 and 4, is seen to include a unitary shell construction having a top wall 32, a far wall 34 (at the "toe" of the club head), a bottom wall 36 and a near wall 38 formed about a hollow cavity with a front opening 40 and a rear opening 42. A block 44 of the same material as that from which the central housing part walls just described are made is located in shell cavity integral with the near wall 38 and adjacent portion of the top wall.

Extending upwardly from the top wall just above block 44 is a tapered cylindrical member 46 made of the same material as the other walls and to which the hosel 20 is mounted as will be described.

Referring now to FIG. 5 as well as FIGS. 3 and 4, the front opening 40 of the central housing part 18 has a continuous forwardly extending flange 48 encircling the front opening and conforming to the shape of the rear, bottom near, far and top walls and positioned so that a continuous outwardly extending wall 50 lies adjacent the flange 48.

Moreover, the flange 48 and the flange 26 on the ball striking plate 16 are so dimensioned and formed that the plate can be fitted onto the central housing part 18 such that the two flanges interfit and mate with one another (FIG. 5).

When the plate is assembled onto the central housing part as just described, the opening 28 in the plate flange fits into a slot 52 on the outer surface of the cylindrical member 46. Preferably the plate 16 is secured to the central housing portion flange by three metal pegs 54, 56 and 58 extending through appropriately formed openings in the two flanges 26 and 48, one centered on the top wall and two spaced apart on the bottom wall (FIG. 1).

Similarly, a further flange 60 unitary with the central housing encircles the rear opening 42 conforming to the opening geometry and contiguous with the inner cavity of central housing and terminating at an outwardly extending flange wall 62 that faces rearwardly of the central housing (FIG. 5).

For the ensuing description of the back housing part 22, reference is made to FIG. 5 where it is seen that the back housing part 22 is of unitary construction

having a single opening 64 and a continuous wall 66 enclosing a central cavity 68. The housing opening 64 is so dimensioned and shaped as to enable fitting receipt onto the further flange 60 of the central housing and is secured thereto by a suitable cementitious material (FIG. 5).

5 Although other materials may be advantageously employed, in a practical construction of the invention both the central housing part and back housing part were molded from a graphite composite including carbon fibers and having a weight of approximately 4.0 ounces where the maximum overall distance from the rear wall to the front wall was 4.75 inches and the external height was 2.25 inches. 10 The titanium ball striking plate was constructed of a plate having a thickness of 0.125 inches and weighed 4.5 ounces.

 On assembly, the bushing 20 is mounted within an opening 66 in the upper surface of the cylindrical member 46 and the outer surfaces of the housing parts and striking plate are finished to a smooth flat surface. Finally, a protective 15 coating is applied to the outer surface of the housing parts.

 One or more weights 68 are secured to the bottom wall of the back housing cavity (FIG. 5) along the centerline between the near and far walls 38 and 34. The exact amount of weight can be customized for the individual player, however, in practical constructions of the invention best results were obtained with a weight in 20 the range of 5–30 grams. In this manner, the center of gravity 70 is located just rearwardly of the ball striking plate 16 and lower than conventional clubheads.

 Although the present invention has been described in connection with a preferred embodiment, it is to be understood that those skilled in the appertaining

art may make modifications that come within the spirit of the invention as disclosed and within the ambit of the appended claims.